BULLETIN OF BUSINESS RESEARCH

COLLEGE OF COMMERCE AND JOURNALISM
THE OHIO STATE UNIVERSITY

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CONVENTION CALENDAR

February 20-21	Columbus, Ohio	Ohio State Association of Builders Exchanges (Executive Committee meeting), Phillip P. Gott, Secretary, Akron, Ohio.
February 21-22	Cincinnati, Ohio	Ohio Retail Dry Goods Association, C. E. Dittmer, Secretary, 175 South High Street, Columbus, Ohio.
February 23-24	Columbus, Ohio	Ohio Petroleum Marketers Association, W. A. Milne, Secretary, 606 Commerce Building, Columbus, Ohio.
February 27-28	Columbus, Ohio	State Automobile Insurance Association, G. Schnell, Secretary, Third and Gay Streets, Columbus, Ohio.
March 1-2	Cincinnati, Ohio	National Metal Trades Association, J. M. Manley, Secretary, 705 Elm Street, Cincinnati, Ohio.
March 5-9	Chicago, Illinois	National Association of Retail Clothiers and Furnishers, Chas. E. Wry, Secretary, 509 South Franklin Street, Chicago, Illinois.
March 13	Columbus, Ohio	Ohio Valley Shippers Advisory Board, W. A. Gates, Secretary, 4th and K Streets, Louisville, Kentucky.
March 15-16	Columbus, Ohio	Federation of Mutual Insurance Association of Ohio, A. F. Little, Secretary, Covington, Ohio.
March 26-30	Columbus, Ohio	Ohio Valley Retail Furniture Dealers Assn., George Bricker, Secretary, 175 South High Street, Columbus, Ohio.
March 30, Apr. 1	Columbus, Ohio	Fiftieth Anniversary of College Fraternalism, Prof. Thomas E. French, Local Chairman, Ohio State University, Columbus, Ohio.

BULLETIN OF BUSINESS RESEARCH

THE COURSE OF BUSINESS IN THE CITIES OF OHIO

Bank Debits

A considerable up-turn in bank debits in Ohio occurred in January. This was in contrast to a slight decline in the country as a whole. Reference to Chart I will show that the tendency of bank debits in Ohio is fairly uniform with that of the entire country. The movement of bank debits in the various cities was rather irregular. Considerable declines occurred in Akron, Dayton, and Youngstown, while increases were registered in Cincinnati, Cleveland, Columbus, and Toledo. The increase was especially significant in Columbus. The decline in Akron was considerable.

Construction Contracts Awarded

Construction contracts awarded in Ohio in January as reported by the F. W. Dodge Corporation show a slight decrease from December after the usual seasonal movement is allowed for. Chart II shows the volume of construction activity as indicated by the floor space area covered by contracts awarded. Akron continues to show the greatest increase in construction activity. This is especially noteworthy in comparison with the curves of the other six cities. Five of these other cities registered declines in January while Toledo showed a very slight gain. The pronounced drop in Dayton is not of great significance because the previous December's figure was an extremely unusual one. Columbus and Youngstown showed rather significant drops.

CHART III

EMPLOYMENT IN THE CONSTRUCTION INDUSTRY IN OHIO

January 1926 to January 1927

In Each Series Average Month 1923 Equals 100

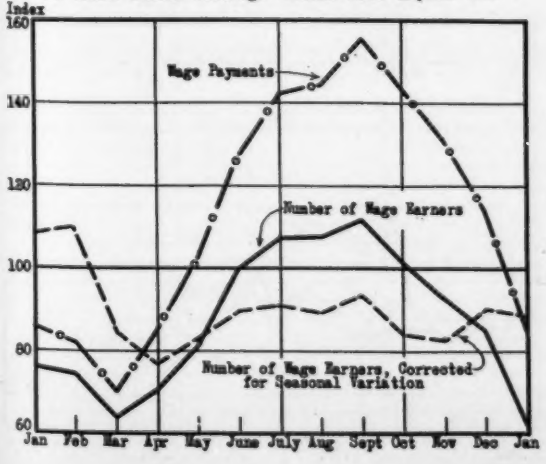


TABLE I

EMPLOYMENT IN OHIO—JANUARY 1927

Industry	No. of Reporting Firms	Dec. 1926	Jan. 1927	Change from January 1926
A—CONSTRUCTION—Av. Mo. 1923=100				
Av. Daily Wage Paym'ts.	95	114	85	− 1.2%
No. of Wage Earners Cor. for S. V.	95	90	88	−18.2
No. of W. Earners Actual				
State of Ohio	95	85	62	−18.3
Akron	17	79	59	−44.4
Canton	8	31	20	−35.9
Cleveland	22	84	59	−10.3
Columbus	10	139	92	− 5.6
Dayton	7	193	165	213.5
Toledo	6	68	45	−40.9
Youngstown	5	56	72	−37.5
B—IRON & STEEL—Av. Mo. 1923=100				
Iron and Steel Group				
Av. Daily Wage Paym'ts	81	94	96	− .7
No. of Wage Earners	81	97	97	− .4
Blast Furnaces				
Av. Daily Wage Paym'ts	7	91	100	− 2.2
No. of Wage Earners	7	92	94	− 7.5
Steel Works and Rolling Mills				
Av. Daily Wage Paym'ts	13	91	93	−10.8
No. of Wage Earners	13	101	101	− 4.4
Foundries and Machine Shops				
Av. Daily Wage Paym'ts	61	96	97	6.0
No. of Wage Earners				
State of Ohio	61	95	95	4.3
Cleveland District	17	110	107	14.3
Northeastern District. (Excl. of Cleveland)	18	80	87	13.9
Northwestern District	9	105	95	−11.2
Southern District	17	107	111	21.6
C—METAL TRADES*—Av. Mo. 1925=100				
State of Ohio	214	94	96	− 6.8
Canton	68	87	81	−15.6
Cincinnati	42	97	96	−10.3
Cleveland	34	110	109	+ .1
Columbus	19	97	109	− 6.0
Toledo	51	93	101	+ 1.0

*From National Metal Trades Association.

EMPLOYMENT IN OHIO CITIES

Construction Industry

Construction employment in Ohio normally shows a seasonal decrease in January. This is substantially what occurred during the last January. The seasonally corrected employment curve in Chart III shows practically no change from December. However, in comparison with January, 1926 construction employment in Ohio during the last month shows a drop of 18.3%. Table I shows the employment changes in the seven cities for which data are available. Since February 1926, employment in the Ohio construction industry has been on a somewhat lower scale, but the month to month variations have not been large when the usual seasonal adjustment is made.

CHART I

BANK DEBITS IN OHIO CITIES

January 1925 to Date

Corrected for Normal Seasonal Variation

Average Month 1920-1924 Equals 100

Source: Federal Reserve Board

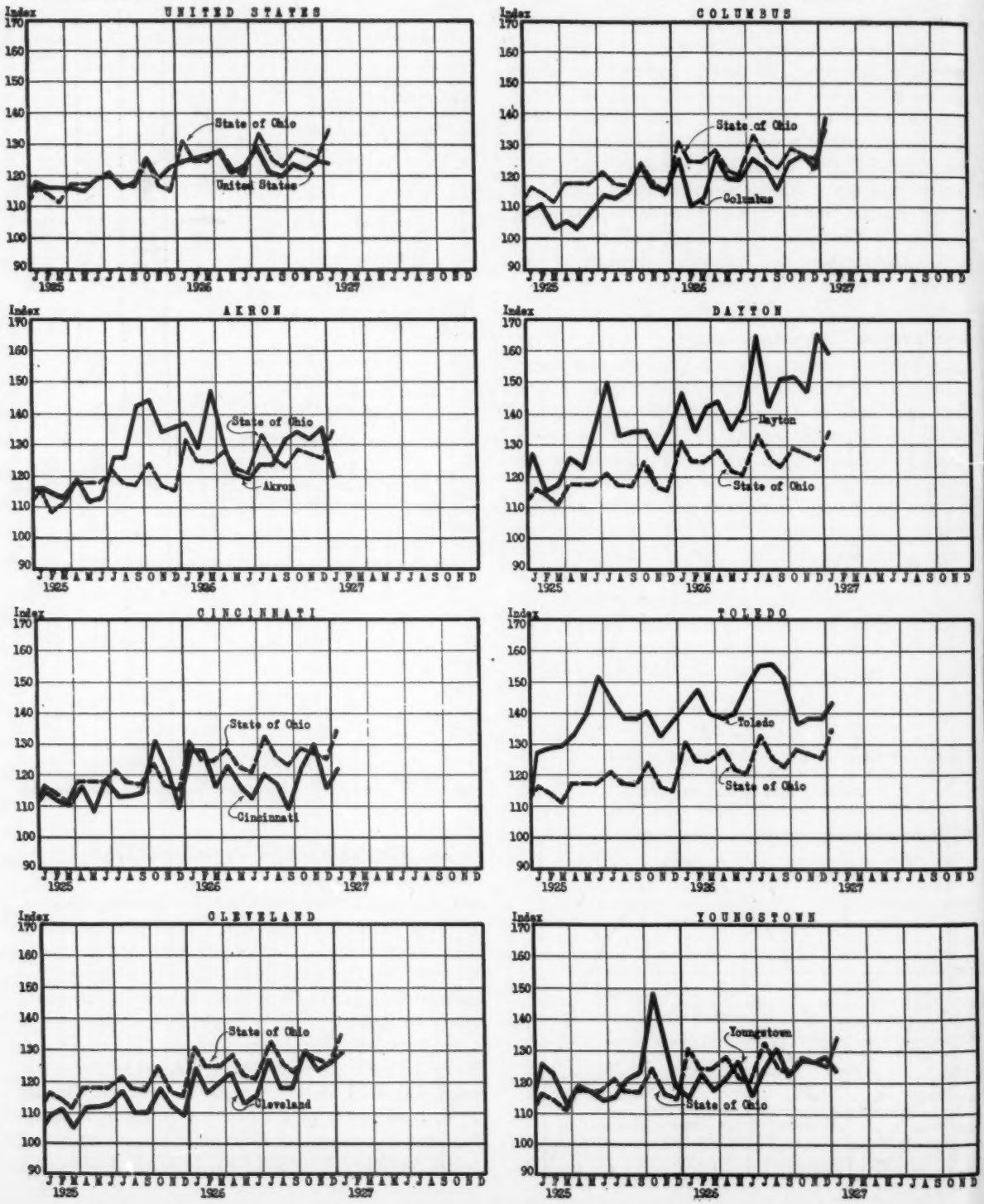


CHART II

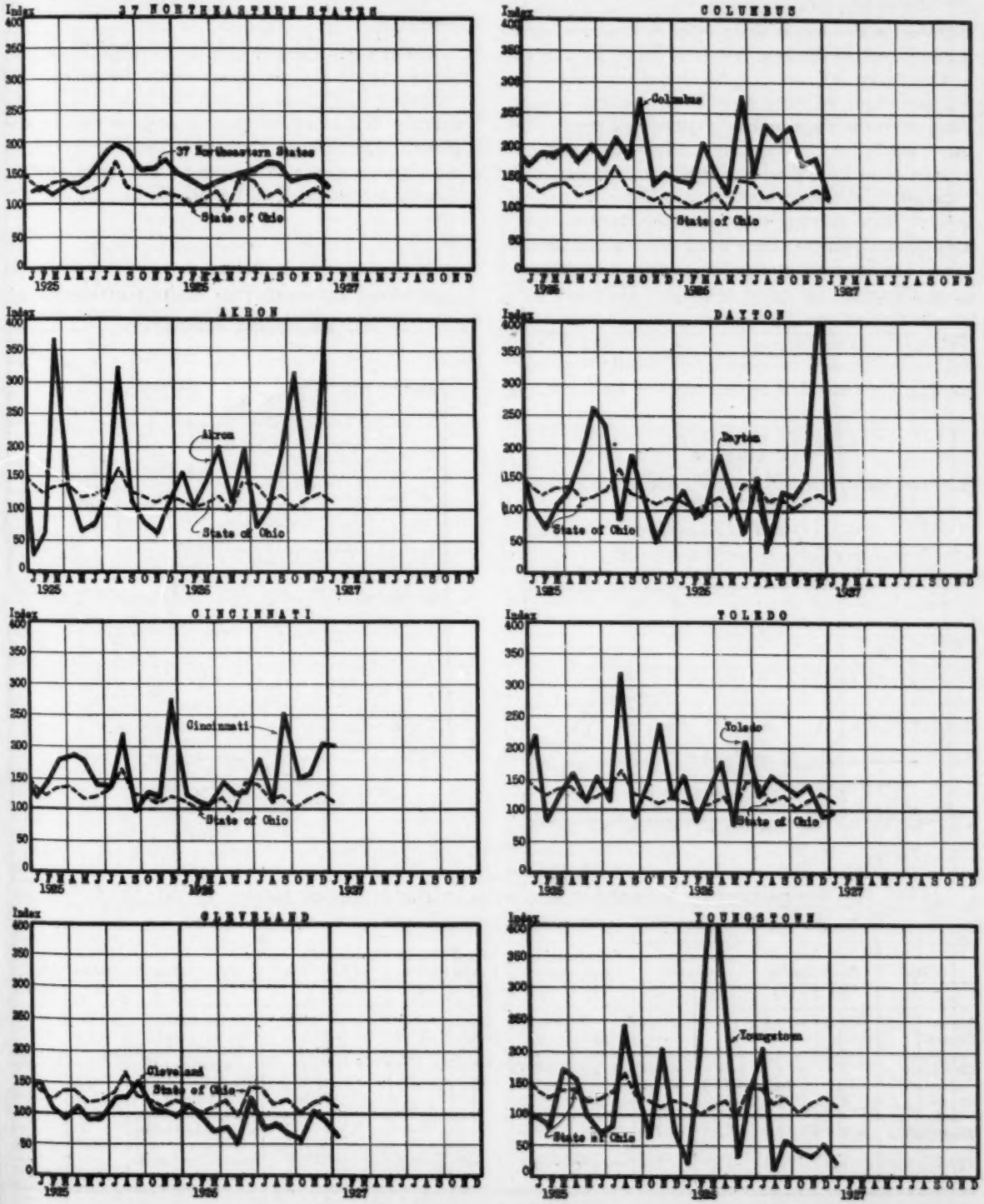
FLOOR SPACE OF CONSTRUCTION CONTRACTS AWARDED IN OHIO

January 1925 to Date

Corrected for Normal Seasonal Variation *

Average Month 1920-1924 Equals 100

Source: F. W. Dodge Corporation



* All Series are Corrected by the State Index of Seasonal Variation

Iron and Steel Industry

The employment changes in the various divisions of the iron and steel industry for which data are available are shown in Table I. It will be observed that all of the Bureau's employment series have been assembled in this one table in order to conserve space. Employment in the iron and steel group as a whole is also shown in Chart IV. No change occurred in the number employed curve from December, but a slight increase in the wage payments curve took place. The steel works and rolling mills show practically no change from December, although in comparison with January, 1926 the current January shows a drop of 4.4%. Blast furnace employment in January recovered partly from the slump which occurred in December. The increase in number employed in January from December amounted to 2.2%. The wage payments curve showed a somewhat greater increase from December. It will be noted that all the wage payments indices for January represent average daily wage payments. The individual reports received from employers indicate the number of days worked during the reporting period and this enables the computation of the average daily wage payments. It is believed that such an index will be a more reliable gauge of the variations in wages than the total wage payments as reported heretofore.

Foundry and machine shop employment in January showed practically no change from December. As compared with January, 1926, however, the current January showed an increase of 4.3% in number employed. The changes occurring in the four districts of the state are shown in the table. The limits of these districts are indicated on the map in Chart V.

CHART IV

EMPLOYMENT IN THE IRON AND STEEL INDUSTRIES IN OHIO

January 1926 to January 1927

Average Month 1923 Equals 100

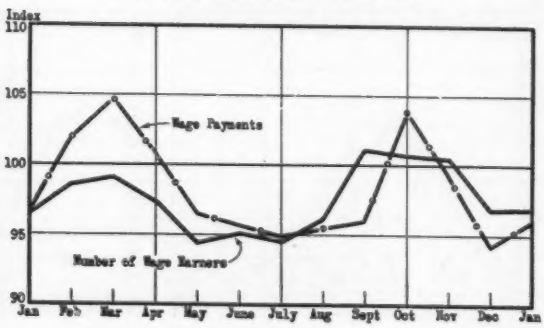


CHART V

DIVISIONS OF OHIO FOR WHICH CHANGES IN FOUNDRY AND MACHINE SHOP EMPLOYMENT ARE REPORTED

TABLE I—A

SUMMARY OF BUSINESS CONDITIONS IN THE CITIES OF OHIO

Per Cent Change from (1) Previous Month and (2) Same Month Last Year

City	Bank Debits		Construction Contracts Awarded		Construction Employment		Metal Trades Employment		Automobile Bills of Sale Filed	Other Series for State of Ohio		
	*(1)	(2)	*(1)	(2)	*(1)	(2)	(1)	(2)	(1)	Series	(1)	(2)
Akron	−11.6	−12.6	125.0	235.1	.5	−44.4	—	—	− 2.8	Employment:		
Canton	—	—	—	—	−14.0	−36.0	− 6.1	−15.0	−23.9	Foundry and		
Cincinnati	5.4	− 4.2	− 1.4	65.8	—	—	.5	2.2	−53.0	Machine Shops	− .1	4.3
Cleveland	2.4	3.4	−31.3	−44.9	− 5.0	−10.3	−13.4	−11.2	−34.1	Steel Works	.2	− 4.4
Columbus	13.3	10.7	−37.9	−21.6	−10.9	− 5.6	12.5	− 6.5	−47.1	Blast Furnaces	2.2	— 7.5
Dayton	1.5	8.0	−73.0	−12.3	15.2	213.5	—	—	−20.0	Iron & Steel	.1	—.4
Toledo	4.1	1.1	6.2	−37.7	−11.1	−40.9	9.3	1.1	———	Composite Index	1.3	− 5.4
Youngstown	− 4.4	7.5	−62.3	− 7.3	75.0	−37.5	—	—	———	WholesaleGrocery Sales	−16.9	− 6.6
STATE	6.3	2.6	−10.5	1.8	− 1.8	−18.3	1.6	− 6.9	−38.8	Retail Dry Goods Sales**	−48.1	6.0

*The usual seasonal change is allowed for.

**Preliminary.

Employment in the Metal Trades

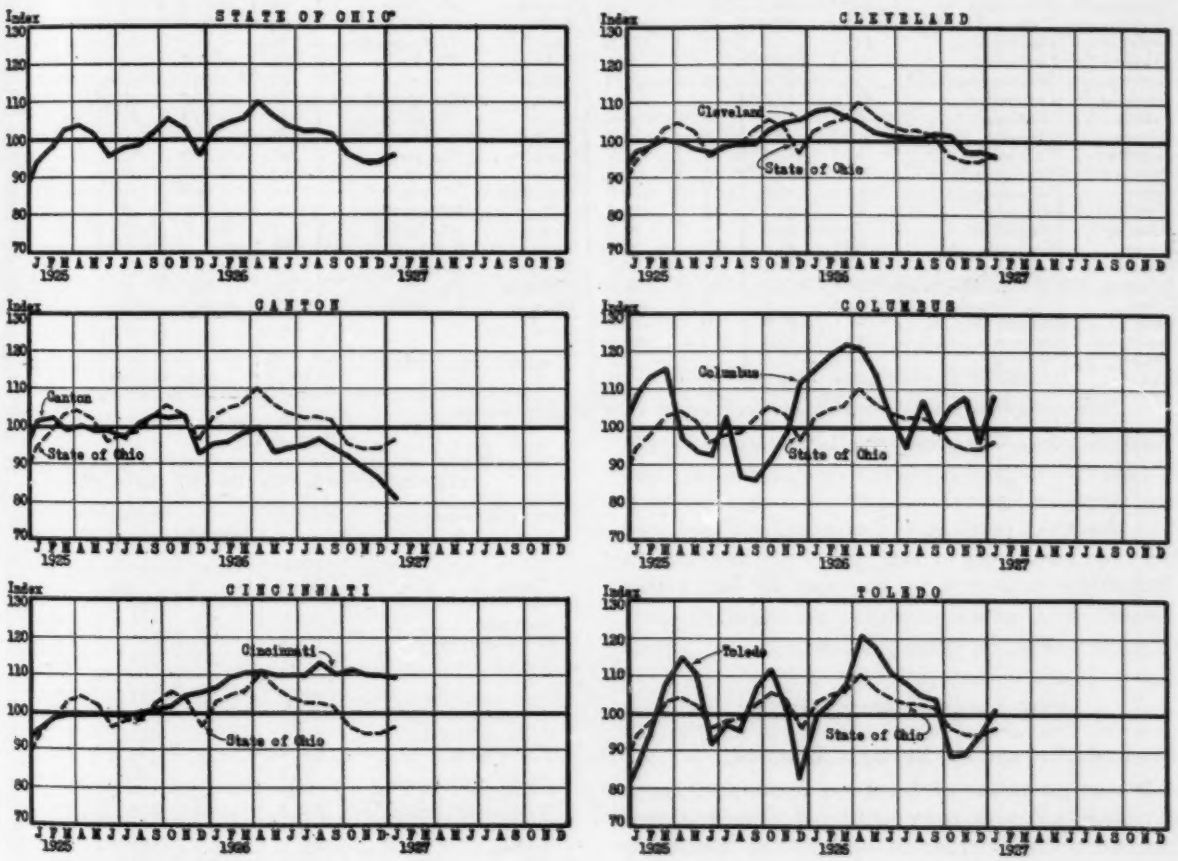
The data furnished by the National Metal Trades Association show a slight increase in employment in January. Chart VI shows practically no change in Cincinnati and Cleveland, fairly sharp increases in Columbus and Toledo and a continuation of the decline in Canton. The Ohio curve has shown a declining tendency since April of 1926. Whether the slight increase registered in January signifies an up-turn or merely a halt in this decline remains to be seen.

CHART VI

EMPLOYMENT IN THE METAL TRADES IN OHIO

January 1925 to Date

Average Month 1925 Equals 100 Source: National Metal Trades Association



*Aggregate of the Five Cities.

SUMMARY OF BUSINESS CONDITIONS IN OHIO CITIES

Business conditions in the cities of Ohio for January are summarized in Table I-A. The percentage changes from December and from January, 1926 are shown in parallel columns.

REGISTRATION OF AUTOMOBILE BILLS OF SALE

For the month of January reports were received from fifty-six Clerks of Courts of Ohio. These reports show registration of bills of sale during January covering 8,137 new passenger cars and 1,089 new commercial cars. January is normally a low month in au-

TABLE II
REGISTRATION OF AUTOMOBILE BILLS OF SALE IN OHIO COUNTIES, JANUARY 1927
Source: Clerks of Courts of Listed Counties

County	County Seat	Passenger Cars		Commercial Cars		County	County Seat	Passenger Cars		Commercial Cars	
		Number	Per Cent Increase Over Previous Mo.	Number	Per Cent Increase Over Previous Mo.			Number	Per Cent Increase Over Previous Mo.	Number	Per Cent Increase Over Previous Mo.
Adams	West Union	55	−78.0	14	−48.1	Mahoning	Youngstown	300	———	50	———
Allen	Lima	215	−13.0	35	84.2	Medina	Medina	56	———	13	———
Ashtabula	Jefferson	121	−52.7	24	−31.4	Meigs	Pomeroy	14	−75.0	2	−86.7
Athens	Athens	90	66.7	14	55.6	Mercer	Celina	42	———	2	———
Belmont	St. Clairsville	151	−38.4	19	−51.2	Miami	Troy	84	−41.3	19	− 5.0
Brown	Georgetown	55	−24.7	5	66.7	Monroe	Woodsfield	48	54.8	0	−100.0
Butler	Hamilton	125	−55.0	11	−64.5	Montgomery	Dayton	480	−20.0	80	−20.0
Carroll	Carrollton	20	−64.9	1	−75.0	Morrow	Mt. Gilead	61	−30.0	5	−68.8
Champaign	Urbana	52	−50.9	8	−27.3	Muskingum	Zanesville	150	−40.0	8	−20.0
Cuyahoga*	Cleveland	1,460	−34.1	261	− 1.1	Ottawa	Pt. Clinton	59	−43.3	8	.0
Darke	Greenville	59	−60.7	15	.0	Paulding	Paulding	60	−16.7	3	−40.0
Defiance	Defiance	115	− 1.7	12	140.0	Perry	N. Lexington	83	−25.9	11	175.0
Fairfield	Lancaster	104	−55.7	15	−44.4	Pickaway	Circleville	56	−34.9	8	60.0
Fayette	Washington C. H.	56	−37.1	11	−21.4	Putnam	Ottawa	89	−30.5	10	100.0
Franklin	Columbus	873	−47.1	—	———	Ross	Chillicothe	58	−37.0	8	−70.4
Fulton	Wauseon	83	—	13	———	Scioto	Portsmouth	134	−30.2	22	−35.3
Geauga	Chardon	8	−74.2	6	−14.3	Shelby	Sidney	42	−56.7	6	500.0
Guernsey	Cambridge	54	−57.1	9	−57.1	Stark	Canton	293	−23.9	32	−27.3
Hamilton	Cincinnati	715	−53.0	77	−82.5	Summit	Akron	700	− 2.8	89	107.0
Henry	Napoleon	86	−39.0	14	180.0	Trumbull	Warren	218	−44.5	34	−32.0
Highland	Hillsboro	67	−48.1	16	−23.8	Union	Marysville	34	−27.7	6	−64.7
Hocking	Logan	15	−68.8	3	−40.0	Vinton	McArthur	3	———	2	———
Huron	Norwalk	95	−45.7	10	−28.6	Warren	Lebanon	78	———	0	———
Jackson	Jackson	59	−40.4	4	−66.7	Wayne	Wooster	91	−54.3	22	−29.4
Jefferson	Steubenville	161	− 7.5	36	16.1	Williams	Bryan	86	−38.1	9	−18.2
Knox	Mt. Vernon	42	−39.1	2	100.0	Wyandot	U. Sandusky	37	−54.3	11	37.5
Lake	Painesville	91	−40.9	10	−47.4						
Lawrence	Ironton	57	−20.8	19	137.5						
Licking	Newark	110	−51.5	25	−16.7	Total of Comparable Counties		8,137	−38.8	1,089	−31.9
Lorain	Elyria	149	−47.7	20	−50.0						

*Supplied by Cleveland Automobile Manufacturers and Dealers Association.

tomobile sales. The percentage declines from December are not especially significant because in many cases the December figures were inflated since a considerable number of purchasers of cars during 1926 waited until the last month of the year to file their papers. Registration of over 8,000 passenger car bills during January indicates a considerable volume of business for that month. (See Table II.)

THE TREND OF BUSINESS

Stock Market and the Business Situation

During the month of January price fluctuations in the industrial group were small but there was pronounced activity in railroad stocks. The speculation in rails was connected to some extent with the gossip in regard to consolidations. Moreover, the decline in prices during the past year does not affect unfavorably the earnings of the railroads. The physical volume of traffic has been well maintained and railroad rates have not changed. This accounts to some extent for the more favorable attitude toward the future of railroad stocks than to the future of industrial stocks. The industrial situation continues to be the outstanding consideration affecting the tendency of prices in the stock market. The tendency

TABLE III
STANDARD INDICES OF THE SECURITY MARKETS
COMMON STOCK PRICES—BY GROUPS
Source: Standard Statistics Company, Inc.

Group	1927 Feb. 5	Change In Points from Dec. 31.	1927 Range	
			High	Low
230 Stocks	155.1	1.5	155.1	152.4
199 Industrials	161.5	.4	161.5	159.0
31 Rails	139.5	3.9	139.5	135.7
10 Automobiles	230.2	− .6	232.7	222.6
8 Auto Accessory	386.5	− 7.7	389.9	373.4
11 Chain Stores	416.5	−11.5	421.8	412.3
7 Chemical	180.9	2.0	180.9	178.1
3 Coal	65.6	− 5.5	68.8	65.6
11 Copper	114.8	− 1.2	116.7	114.8
3 Electrical Equip.	252.2	− 2.0	255.4	248.6
3 Farm Machinery	156.5	4.2	156.5	148.0
9 Food	308.1	− 5.7	313.9	306.1
5 Leather & Shoe	58.4	1.4	58.7	56.9
5 Machine Manufact.	95.2	2.2	95.2	93.6
3 Mail Order	175.0	− 7.7	178.3	175.0
12 Metals (Misc.)	123.2	2.3	123.6	120.3
13 Paper	75.5	− .4	80.1	75.5
7 Petroleum	114.2	4.6	114.2	108.7
10 Railroad Equipt.	177.7	.1	179.2	175.2
3 Shipping	21.7	− .7	24.2	21.7
9 Steel	123.5	− .4	124.5	122.4
6 Sugar	71.0	− .2	72.0	70.2
5 Telegraph & Cable	165.3	4.1	165.9	163.7
5 Textile	40.3	− 2.4	42.8	40.2
3 Theatres	171.8	7.9	173.7	164.2
7 Tires & Rubber	48.0	− 2.7	48.0	46.1
7 Tobacco	167.6	− 2.9	168.7	167.2
16 Tract., Gas & Power.	217.7	− 3.0	220.8	214.6
18 Misc. (Indust.)	209.7	− 3.3	210.6	207.9

*Indices shown in last Bulletin.

toward accumulation of surplus funds in the Federal Reserve Banks is favorable to stock market speculation, but cheap money cannot long support an upward movement in stocks in the face of an uncertain industrial situation. The prospect for trade and industry in 1927 still indicates the continuation of fairly prosperous conditions with a volume of trade showing little, if any, gain as compared with 1926. At the present time there is a continuation of the mild recession which developed during 1926. (See Table III.)

Banking and Credit Conditions

The total of bills discounted by the Federal Reserve Banks declined from $633.5 millions on Jan. 5 to $393.3 millions on Feb. 2. During the same period the Federal Reserve notes in circulation declined from $1813 millions to $1687 millions. These declines show a larger contraction in credit than took place in the same period in 1926 when the bills discounted declined about $105 million and the Federal Reserve notes in circulation declined about $115 million. The New York Federal Reserve rediscount rate has remained at 4 per cent. During this period the rate of discount on sixty to ninety-day commercial paper in New York has declined from 4½ per cent to 4 per cent. The call loan rate has declined from 4½ per cent to 4 per cent and the rate on four to six months collateral loans has declined from 4⅝ to 4½ per cent. These rates show little variation from those which prevailed in 1926 at the same period of the year. The heavy declines in rediscounts suggest the possibility of lower rates of interest.

Iron and Steel Industry

The employment situation in blast furnaces and in steel works and rolling mills for January 1927 is fairly representative of the present situation in the iron and steel industry. December represented the low point for the year 1926. January 1927, so far as employment in the iron and steel industry is concerned, was substantially the same as that for January 1926. (See Table I.)

There has been a decided weakness in iron and steel prices during the month of January and the higher prices for scrap toward the end of January were not maintained during the first week of February. The total unfilled orders of the United States Steel Corporation continue to show a slight increase from month to month. This upward trend in unfilled orders began in September 1926, and has continued at about the same rate from month to month to January 1927. However, compared to the rate of increase in unfilled orders beginning in September 1925, and ending in January 1926, the present rate of increase is comparatively small. The percentage of furnaces in blast was 56.9 per cent at the end of January as compared with 55 per cent in December and 57 per cent in November. Again it appears that December was the low point in production for the past twelve months. The improvement in January was small both for employment and for percentage of furnaces in blast. The price index for pig iron on February 9 was $19.13 per ton as compared with $19.71 per ton on January 5. Likewise, the price of steel was somewhat lower, being 2.474 cents per pound as compared with 2.53 cents per pound one month ago. The price of No. 1 wrought iron scrap was $14.00 per ton on February 9 as compared with $13.75 per ton on January 5. Trade reports indicated a tendency toward expansion in volume in the iron and steel business during the first week of February, although prices showed no tendency toward stabilization. One of the significant features about the lower prices in the pig iron market is that the weakness in prices is especially noticeable on the Atlantic seaboard and in the Cleveland District. This is evidence of the attempt of Germany and other European nations to market their surplus in the territory surrounding American ports.

Construction and Contracts Awarded

The total volume of construction in January, 1927 for 37 eastern states declined 16 per cent as compared with January, 1926. Taking account of the usual increase in construction from year to year and the usual seasonal movement, it appears that construction for January, 1927 is several points below normal. As compared with the normal volume of construction at this time of the year the total is the lowest figure since April, 1926. The sag in contracts awarded in the spring of 1926, however, was lower than it has yet reached in 1927. Turning to the figures for the Pittsburgh district, the situation is more encouraging. Construction in January was not only 29 per cent above the total for January, 1926, but was also in excess of the normal construction to be expected considering the season of the year and the average increase from year to year.

The most striking development from the standpoint of construction is to be found in the Middle Atlantic States. A very remarkable construction boom has been developing there since February, 1926. A glance at the percentages of increase over the corresponding year in Table IV indicates the nature of the development in that section. In January there was some check in the building boom which has been developing in the Central West, but not in that of the Middle Atlantic States.

TABLE IV
CONSTRUCTION CONTRACTS AWARDED IN 37 STATES AND BY DISTRICTS JANUARY, 1927
Source: F. W. Dodge Corporation
(Millions of Dollars)

District	Dec. 1926	Jan. 1927	Change From Jan. 1926
New York State and Northern New Jersey	$226.5	$118.7	−39.3%
New England	33.1	17.2	−32.8
Middle Atlantic	46.4	53.4	54.3
Pittsburgh	44.5	50.1	29.1
Southeastern	39.1	42.3	−35.7
Central West	127.1	84.7	7.1
Northwest	3.4	2.5	−37.5
Texas	17.3	15.5	12.3
Total of 37 Notheastern States	$537.4	$384.5	−15.9%

Automobiles

Table V shows a striking decline in the sale of automobiles in both the Philadelphia and Chicago Districts for the month of December. In the Philadelphia District this decline in sales was accompanied by an increase in inventories. Table II, page 8, shows a distinct decline of sales of automobiles in Ohio counties as compared with December.

The production of passenger cars in the United States and Canada for December was 49.9 per cent below the production for December, 1926. (See Table VI and Chart VII.) This represents the low point of automobile production since 1922. The situation prevailing in automobile production and in the construction industry accounts in large part for the dullness in the iron and steel industry. December was also the low point both for the year and for the percentage of increase over the sales for the corresponding month of the preceding year for the General Motors Corporation. For the first time since January and February of 1925 the sales of General Motors showed a decline as compared with the corresponding period in the preceding year. At the same time the decline in the sales of General Motors units is small as compared with the decline in production in the United States and Canada.

Employment

Employment in the metal trades in January showed a slight increase as compared with December. Considering employment in the various industries as set forth in the tables and charts on employment under the caption of "The Course of Business in Ohio Cities," it appears that the situation of employment in this state shows a small improvement in January as compared with December.

Agricultural Situation

The country is now thinking of agriculture in terms of the prospect for 1927 and refers to the crop of 1926 in its bearing on future prospects. For example, it is estimated that the probable carry over of cotton from present supplies is likely to be 8½ to 9 million bales. Unless the South makes drastic curtailment of cotton planting or has a serious failure in the next cotton crop, cotton prices will remain low for 1927. There is a 5 per cent increase in the total winter wheat planted. It is believed that there will be a 13 per cent increase in the planting of potatoes on account of the shortage in this crop during the past two years. The prospect for prices of live stock in 1927 is good. The total hog crop in the United States now is substantially the same as it was in January 1926. Likewise, the total sheep crop in the United States is only slightly greater now

TABLE V
AUTOMOBILE TRADE IN PHILADELPHIA AND CHICAGO FEDERAL RESERVE DISTRICTS DECEMBER, 1926
Source: Federal Reserve Banks

Classes of Cars	Philadelphia District Change From		Chicago District Change From	
	November 1926	December 1925	November 1926	December 1925
New Cars				
Wholesale—Number Sold	−42.3%	−45.0%	− 3.1%	−30.2%
Value	−34.8	−44.3	−4.5	−29.6
Retail—Number Sold	−68.3	−26.2	−0.5	−13.4
Value	−59.3	−20.5	−2.0	−6.2
On Hand Dec. 31—Number	+3.0	−50.0	−20.1	+ 4.9
Value	+22.9	−34.6	−15.4	+16.6
Used Cars				
Number Sold	−25.1	+0.3	−5.3	+11.1
Salable on Hand—Number	+13.9	+19.3	+1.6	+ 0.6
Value	−2.1	+12.7	−5.7	+ 2.0

TABLE VI

PASSENGER AUTOMOBILE PRODUCTION IN THE UNITED STATES AND CANADA, AND GENERAL MOTORS SALES

DECEMBER, 1926

Source: U. S. Department of Commerce; Commercial and Financial Chronicle.

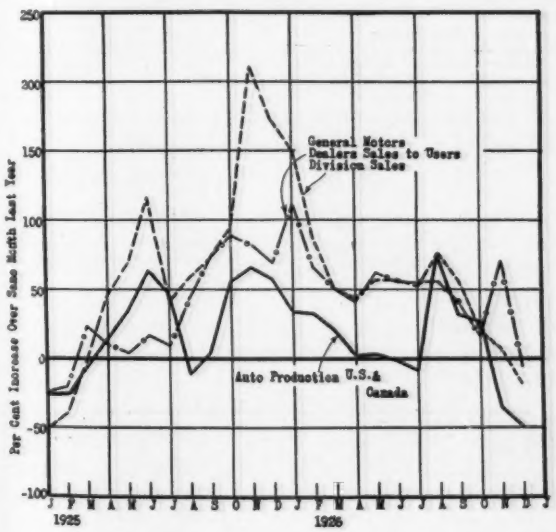
Group	November 1926	December 1926	Change From Dec. 1925	Year 1926	Change From 1925
Automobile Production	226,278	143,413	−49.9%	3,929,535	2.4%
General Motors Sales:					
Dealers sales	101,729	52,729	− 6.1	1,215,826	46.9
Division sales	78,550	44,130	−18.5	1,234,850	47.8

CHART VII

PASSENGER AUTOMOBILE PRODUCTION IN UNITED STATES AND CANADA, AND GENERAL MOTORS SALES

January 1925 to date by Months

Sources: U. S. Department of Commerce — Commercial and Financial Chronicle



than in 1926. The total number of cattle in the United States now is slightly less than it was in January of 1926. This leads to a forecast of good prices for live stock in 1927, at least as good as those which prevailed in 1926. In general, the trend of agricultural prices has continued to be downward. The general index of purchasing power of farm products in terms of non-agricultural commodities remained at 80 during December, the average of the five pre-war years being considered as 100. This is the same level as that which prevailed in November. However, the corresponding figures at the end of 1925 was 87. Table VII shows the trend of prices in various groups of commodities according to the Bureau of Labor Statistics.

TABLE VII

COMPARATIVE WHOLESALE PRICES FOR VARIOUS GROUPS IN THE UNITED STATES—DECEMBER, 1926

Average Month 1913 Equals 100

Source: U. S. Department of Labor

Commodities	Dec. 1925	Nov. 1926	Dec. 1926	Per Cent* Increase over Previous Month
Farm Products	152.2	134.6	134.9	.2
Food	157.1	151.1	151.0	− .1
Clothing Material	187.1	169.9	168.6	− .8
Fuel	174.8	190.2	182.9	−3.8
Metal and Metal Products	129.5	126.5	125.7	− .6
Building Materials	177.0	174.0	172.7	− .7
Chemicals and Drugs	134.5	128.5	128.2	− .2
House-furnishing Goods	165.9	159.9	159.4	− .3
ALL COMMODITIES	156.2	148.1	147.2	− .6

*Minus (−) indicates net decrease.

Retail and Wholesale Trade

The Ohio wholesale grocery sales index for January, 1927 showed a decline of 6.6 points as compared with January, 1926, and physical volume of sales was 6.7 points below that of January, 1926. The index for wholesale sales in all lines for the Cleveland District in December showed a decline of about 3 points as compared with that of December, 1925. Likewise, wholesale sales in December were about 4 points below normal for the Cleveland District in December. The Fairchild Textile Apparel Analysis reported a slight gain in retail sales for January as compared with January, 1926. Among the cities reporting declines were Pittsburgh and Cleveland. The prospect is for a moderate volume of sales in February. In fact, the sales in December and January were rather large considering the state of employment for these months. February sales should reflect to some extent the slight recession in employment of the past three months.

Domestic Prices

Fisher's index of wholesale prices showed a decline from 146.1 on January 1 to 144 on February 5. During the five weeks ending February 5 there was a small decline in wholesale prices with the exception of one week. The indices of Dun and Bradstreet tell substantially the same story. Table VIII shows a tendency

to firmer gold prices in France and Germany. Prices in England show a slight reaction from the high prices growing out of the coal strike. The firmer prices in Germany, however, refer mainly to agricultural products.

TABLE VIII
INTERNATIONAL WHOLESALE PRICE INDICES
(In Terms of Gold, Pre-War Equals 100)
Source: Federal Reserve Bulletin

Country	October 1926	November 1926	Change from November 1925
United States (B. of L. Statistics)	150	148	− 6.3
England (Bd of Trade)	152	151	− 1.9
France (Fed. Res. Bd.)*	104	117	13.6
Germany (Fed. Statis. Bur.)	130	132	9.1
Japan (Tokyo)*	170	168	.0

*The Board's indices were converted on the basis of changes in the dollar value of the currency unit. The average of the cable transfer rates for the month was used.

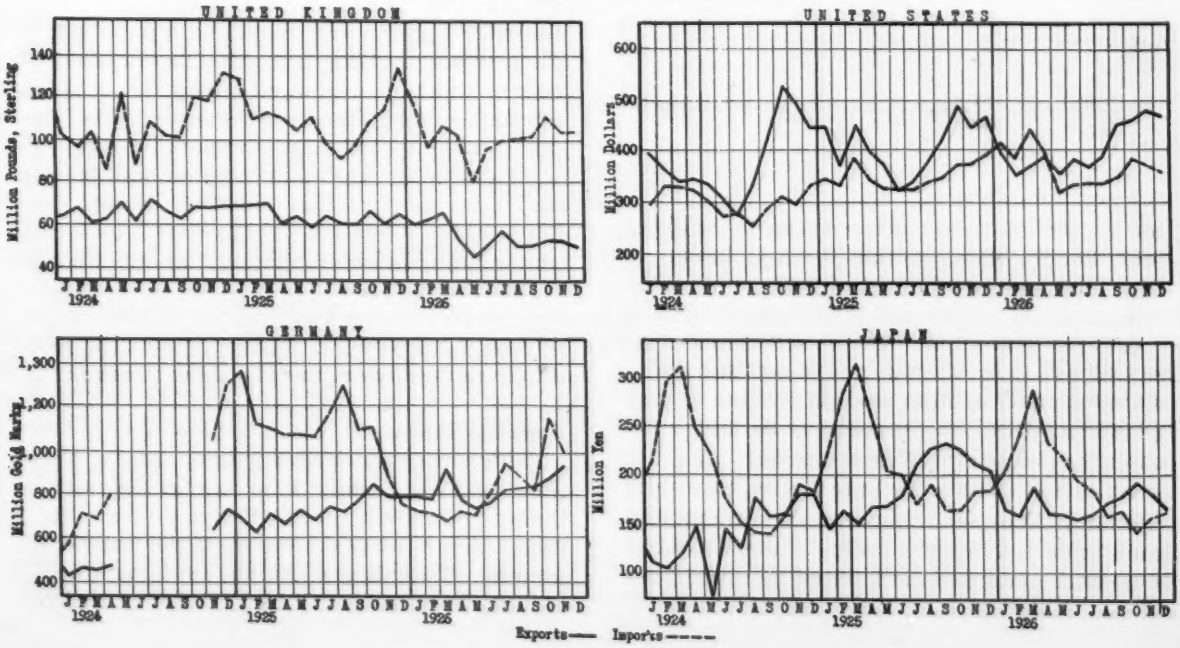
Foreign Trade

The foreign trade of the United States for the month of December was slightly lower than for the preceding month and also slightly below the trade for the corresponding month in the preceding year. Little recovery is shown in December figures for the foreign trade of the United Kingdom, the exports being slightly lower than for November and still far below those of December, 1925. The import trade is still upon a lower basis than in the fall of 1925. The export trade of Germany in the fall of 1926 was larger than in the corresponding period of 1925. The imports for 1926 were distinctly below those for 1925. This shows distinct progress on the part of Germany in the development of a foreign trade balance. (See Table IX and Chart VIII.)

TABLE IX
FOREIGN TRADE
Chief Industrial Nations
(In Millions)
Source: U. S. Department of Commerce

Country	November 1926	December 1926	Change from December 1925	Total 1926	Change from Year 1925
United States, Imports (Dollars)	373.9	361.0	− 9.0%	4,432.5	4.9%
(Dollars)	480.3	467.0	− .3	4,810.4	.0
United Kingdom, Imports (Pounds Sterling)	113.3	113.3	−15.6	1,243.4	− 6.1
(Pounds Sterling)	53.1	49.7	−24.4	655.9	−15.2
Germany, Imports (Gold Marks)	1,000.0	——	——	8,293.0	3.2
(Gold Marks)	876.0	——	——	8,207.0	−33.4
Japan, Imports (Yen)	157.0	162.0	−12.4	2,351.0	2.2
(Yen)	178.0	166.0	−19.8	2,040.0	−19.9

CHART VIII
FOREIGN TRADE, 1924-1926
Chief Industrial Nations
Source: U. S. Department of Commerce



THE COMPOSITE INDEX OF INDUSTRIAL EMPLOYMENT IN OHIO

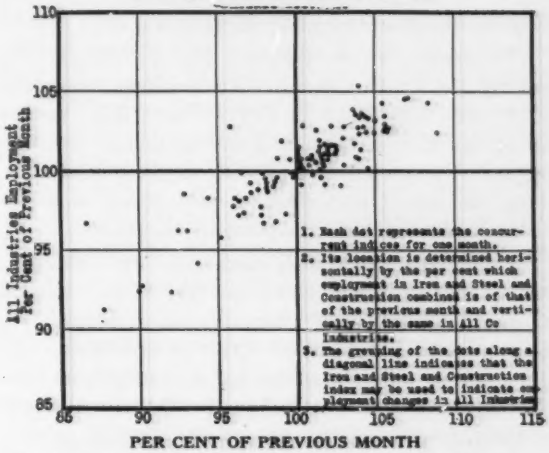
The general employment situation in Ohio is shown in Chart IX. This composite index of industrial employment in Ohio was first presented in the December Bulletin. It was explained in that number that this index is based on the construction industry and the three divisions of the iron and steel industry for which data are available. These industries represent approximately one-third of the industrial employment in Ohio. The charts show that industrial employment in Ohio during 1926 averaged slightly below that of the preceding year and considerably below that of 1923, the base year.

In order to show the representative character of this general employment index Chart X is presented. This chart is a scatter diagram on which the monthly employment link relatives of the iron and steel and construction industries combined are plotted against the concurrent monthly employment link relatives of all industries reporting to the Ohio Division of Labor Statistics. This test covers the period 1914-1924, inclusive. The alignment of the dots along a diagonal line indicates the representative character of the index. The alignment to be sure is not perfect, but the tendency is fairly good. It will be noted from the chart that a given change in iron and steel and construction employment is accompanied by a similar although smaller change in total employment.

CHART X

SCATTER DIAGRAM OF OHIO EMPLOYMENT LINK RELATIVES

January 1914 to December 1924


All Industries Employment Per Cent of Previous Month
110
105
100
95
90
85
85
90
95
100
105
110
115
1. Each dot represents the concurrent indices for one month.
2. Its location is determined horizontally by the per cent which employment in Iron and Steel and Construction combined is of that of the previous month and vertically by the same in All Co Industries.
3. The grouping of the dots along a diagonal line indicates that the Iron and Steel and Construction index may be used to indicate employment changes in All Industries
PER CENT OF PREVIOUS MONTH
IRON AND STEEL AND CONSTRUCTION EMPLOYMENT

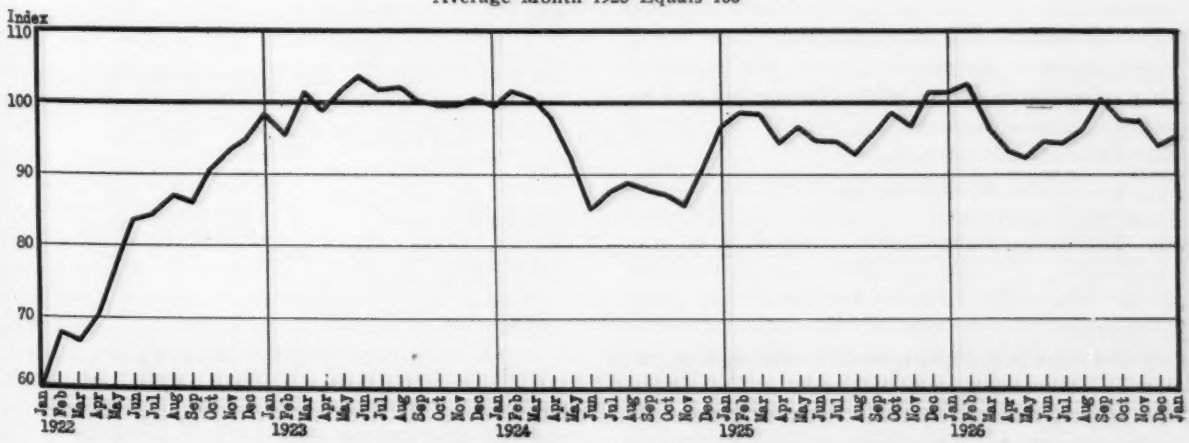
* January-December relatives are not plotted because not strictly comparable.

CHART IX

COMPOSITE INDEX OF INDUSTRIAL EMPLOYMENT IN OHIO

Since January, 1922

Average Month 1923 Equals 100



CONVENTION OF NATIONAL RETAIL DRY GOODS ASSOCIATION

"Improving Distribution" was the general topic at the sixteenth annual convention of the National Retail Dry Goods Association, held in New York City, February 7 to 11. Many valuable contributions to this subject were presented to an audience of delegates representing dry goods stores in all sections of the country.

Problems of store organization, markdowns, personnel training, and unit control of stocks received special emphasis. A feature of the program was a discussion of a new book "Principles of Organization Applied to Modern Retailing," by Paul M. Mazur, of Lehman Brothers, Investment Bankers, New York. This publication was made expressly for the association as a result of more than two years of work. The

committee in charge believes that "the book presents for the first time a complete picture of the operation and organization of retailing, * * * a picture to challenge the serious attention of business executives." In the discussion of this text, although a few minor differences of practice arose as to the best placement of certain functions within the store organization, there was a virtual unanimity of opinion that it will fill a long-felt want among retail distributors.

"Prosperity and the Retailer" was the subject of a talk by Mr. O. H. Cheney, Vice President, American Exchange-Irving Trust Company, New York. He defined prosperity as "buying power in action," pointing out that it was within the province of the retailer so to direct the use of the public's buying power as to aid in the maintenance of prosperity.

In discussing the rise of new distributive channels, Mr. Cheney expressed confidence that no new scheme of merchandising would supplant old methods. He drew a verbal picture of all forms of distribution existing side by side, — commencing with barter and concluding with chain stores and mail order houses. Each of these, he pointed out, has its own peculiar advantages and satisfies some demand for service which must be supplied and paid for.

Some considerable interest was evinced in the rapid inroads being made by big manufacturers into the field of distribution through the aid of national advertising. As reported by "Women's Wear Daily": — "Retailers around the convention hall were ready to discuss the question, but with the immediate proviso 'don't quote me.' The reason back of this attitude is, as frankly stated by one of the leading figures of the association, 'If I allow you to use my name I'll have to spend the next six months explaining my point of view to both manufacturers and retailers'."

The point was brought out that the biggest objection to nationally advertised commodities was the small and diminishing profits which dealers make on such merchandise. National advertising was also referred to as "substitution of brand specification for grade specification."

While there was no agreement of opinion as to nationally advertised brands, one leader at the convention stressed the need of the retailer for greater advertising weight in his own territory, if he wishes successfully to combat nationally advertised merchandise. This same gentleman made the point that certain expenses of distribution must ultimately be borne by the consumer. He could see relatively little difference whether the manufacturer bore part of this through national advertising or whether it was paid for by the retail dealers.

Mr. Lew Hahn, Managing Director of the association, summarized his ideas on this problem as follows: "I feel that if retailers don't improve distribution voluntarily and freely and because they realize that it is the thing to do, they are going to have an improved form or altered form of distribution thrust upon them."

Mr. E. C. Hastings, of the Hastings Research Group, New York, spoke on "markdowns." He emphasized the influence of style on markdowns. His idea was that markdowns are not the result of poor buying, but are the result of poor selection. There are two chief ways of making selections: (1) individual selection, (2) group selection. He stressed the necessity of retailers' picking out styles which appeal to a group of buyers rather than to the individual buyer.

Dr. Harry T. Kitson, Columbia University, discussed "The Development of an Interviewing Technique in Employment." He suggested that the employment department should be prepared to give definite answers to questions made by applicants concerning the opportunities afforded by various positions. Employers often hand out vague generalities in answer to such inquiries. "That all depends on you," they say when asked what the opportunities are for promotion in a given position. "There is always room at the top," — such statements are too general to be worth anything.

Dr. Kitson presented what he calls a "vocational ladder," worked out for full professors at Columbia University. This consisted merely of computing the average age at which the professors reached various rungs on the ladder in their profession, as follows: —

Rung on the Ladder	*Average age at time of attainment (years)*
Baccalaureate degree	22
Master's degree	25
Doctor's degree	28
Instructor	30
Assistant Professor	35
Associate Professor	38
Professor	40

A similar constructed "vocational ladder" for buyers in a department store was shown. This was based upon the experience of seventeen female buyers in a single store.

Rung on the Ladder	*Average age at time of attainment (years)*
Stock girl	16
Sales girl	17
Head of stock	19
Assistant buyer	22
Buyer	27

The above figures were not intended to be used as basic for the profession of buyer, but were cited merely to suggest avenues of research which could be followed by employers to give applicants some idea of what their probable future would be.

Dr. Kitson summarized by stating that the interview should have as its aim not only to probe into the employe, but that the employe should be able to probe into the job, and the employer should be in position to give him concrete information, quantitatively expressed.

Another feature was a debate on the methods of handling merchandise returns, the question being "Centralized vs. Departmental Adjustments." The three major advantages of centralized adjustments cited were:

(1) Chronic kickers will be recognized and handled accordingly
(2) Complete records will be available at one point for taking up with manufacturers
(3) Uniform policy can be adhered to more strictly

On the other side of the debate, in support of the departmental adjustments, it was shown that there are only two problems in connection with adjustments: (1) settlement that is satisfactory to the customer, (2) settlement that is equitable and fair to the store. It was further brought out that the customer is not interested in any technique of store operation. His interest is only in easy shopping and conservation of time; therefore the line of least resistance is to go direct to the department where merchandise was purchased. Under that method it is not necessary to send the customer to some remote point in the store. It was stated that the old policy was to build up barriers so as to avoid the necessity of making adjustments. There was a definite plan of making it easy to buy but hard to get a refund or adjustment. By handling complaints directly in the department concerned the customer is in a frame of mind conducive to the selection of other merchandise.

It was concluded that probably the best system of handling adjustments was to use the departmental method, but also to maintain a central bureau to take care of those settlements which could not be satisfactorily made within the departments.

A novel way of handling adjustments through the personnel department was offered. Contact with returns by the personnel department places them in position to know the faults in selling perpetrated by clerks and leads to their correction, hence reduction of the returned goods evil.

The elimination of waste was one of the subjects before the Traffic Group of the association. Mr. Arthur E. Foote, of the Division of Simplified Practice, U. S. Department of Commerce, gave a demonstration of the advantages of simplified practice as a means of eliminating waste. He said, "Simplified practice means the reduction of variety in size, dimension and material differences of everyday commodities." He showed how General Motors had reduced the number of parts carried from 13,000 to 2,100. He further illustrated how the method applied to a great shoe business. There an assortment of three grades and 2,500 different styles was reduced to one grade and 10 styles. The results were *decreases* as follows:

Production cost decreased 31 per cent
Direct overhead decreased 28 per cent
Inventory decreased 26 per cent
Cost to consumer decreased 27 per cent
Stock turnover increased 50 per cent.

Mr. F. McL. Radford, of the Bon Marche, Seattle, spoke before the Merchandise Managers' Group on "Merchandising at Long Range." He suggested that a department store on the Pacific Coast could have sellers at the head of their departments and keep their buyers in New York City. There they would be in constant touch with the fashion trends. Such a plan would keep the store prepared for any sudden change in style which might develop.

In Mr. Radford's opinion, the hand-to-mouth buying policy is here to stay. He said there is no more chance of going back to the old merchandising methods than of "going back to the horse-car or the high bicycle."

Mr. Royal B. Farnum, Director, Massachusetts School of Art, Boston, discussed "Art Requirements in Merchandising." Art is becoming a vital factor in merchandising as the public grows more conscious of beauty. In the words of Mr. Farnum, "The public is rapidly awakening and is beginning to display a discriminating taste. Therefore, a low grade supply of merchandise must meet its inevitable Waterloo unless it too begins to pick up esthetically, or to put it another way, the retailer who is not sensitive to the art trend in this country is doomed to a continuous run of bargain sales to get rid of his low grade stock." He predicted that "within five years the stores of America will consider their art or style expert or art director equal in importance to the treasurer, and art will be required in the training of buyers and sales force in all our progressive retail houses."

BOOK REVIEWS

Production Economics, by John D. Black, Henry Holt & Co., N. Y., 1926, 375 pp.

Professor Black in his recent book has made a useful contribution by a further approach to the practical application of economic theory, — useful more for the direction his text takes than for its actual content. A large part of the text — nearly 400 pages in all — is indeed of more or less conventional type. An obvious effort has been made to lay down the outlines of a complete picture for the guidance of those just entering upon their study of economics. It is to be expected that there must be thin and inferior sections.

This is the more regrettable because of the extreme excellence of those portions that deal with analyses of cost, price, and the critical factor in production. In these analyses, supported by actual experience data such as Professor Black's past activities as an agricultural economist can supply in sufficient quantity to justify generalization, we have the very thing needed by both business men and students of economics. While we appreciate the force of Professor Black's argument for postponement of considerations of value and price till after a ground work of tested experience can be laid down as a wholesome check upon undisciplined speculation, we regret their omission from this text.

To such thinking business men and industrial managers — and the number is daily increasing — as have come to feel our traditional economics a barren field overgrown with fantastic speculation, this book brings a cheering breath of fresh vital air. Instead of the venerable and futile elaboration of "tendencies" and "influences" we here have a constructive step toward *actualism* by the substitution for tenuous tendencies of operating sequences and for obscure and often occult influences, — quantitative behaviors.

Parts four and five, dealing with "The Operating Unit", particularly in its last section on "Size of the Business Unit", and with "The Coordination of Production," could by themselves constitute an admirable text. They are the sections most useful and most appealing to business managers. If one were disposed to pick flaws one might express regret for the absence of actual statistical data upon which to support all of the various excellent charts. But this we realize — in the present state of business records — must still be exceedingly difficult to accomplish. As business men come more universally to see the merit of such application of economic theory as Professor Black has attempted, they will not be long in making available to actualistic economics the material needed to work out true behaviors of economic forces.

The Science and Practice of Urban Land Valuation, by Walter William Pollock and Karl W. H. Scholz. Manufacturers' Appraisal Company, Philadelphia, 1926, $5.00.

Probably the best known exponent and student of scientific land valuation was the late William A. Somers and the volume claiming our attention here is an exposition of the Somers Unit System for valuing urban land. The book contains a clear and complete explanation of the technique developed by Mr. Somers as well as many of his calculations regarding varying depths, corner influence, alley influence, overlap value, etc.

The publication is divided into three parts: The first part deals with principles underlying land valuation and defends the Somers method of observation for determining unit values. The second part treats the actual practice in valuation, including all the technique involved in the Somers method. The final section of the publication represents a very clear indictment of our present methods of assessing, discussing the failure of state laws to define the value they seek or to provide a plan for arriving at such values. The point is clearly made that there is nothing in the statutes of any state preventing the use of adequate tools for valuation if the assessor can develop or secure them, but the average assessor develops an indifferent method if he develops any at all. The authors have made a distinct contribution to uniformity in valuation technique, although they do not convince the reader that the system is of major value for other than tax purposes.

The authors have confined themselves to urban land and have dealt with the problem from the standpoint of the tax assessor. They definitely show that the adoption of Somers methods can result in an immense improvement over present "look, spit, and guess" methods.

The legislative program advocated deserves the attention of all interested in property taxation and every person concerned with urban land and urban land values will profit by careful perusal of this book even though some of the mathematical formulæ may be too difficult for the layman.

From one standpoint the authors seem to have failed; namely, in the defense of the Somers Method of using one depth curve for all types of property. Certainly depth influences are not the same in business, industrial, and residential land. This has been one of the outstanding criticisms of the Somers system and many municipalities have modified the procedure to take care of this weak spot.

The book is written with the view of explaining and advocating the Somers system.

CONVENTION CALENDAR

February 15, 16, 17, 18..	Columbus, Ohio.....	The Ohio Hardware Association. James B. Carson, Secretary, 411 Mutual Home Building, Dayton Ohio.
February 21-26.....	Chicago, Illinois.....	The Common Brick Manufacturers' Association. Ralph P. Stoddard, Secretary, 2121 Guarantee Title Building, Cleveland, Ohio.
February 21, 22, 23.....	Columbus, Ohio.....	Ohio Valley Retail Shoe Dealers Association. W. E. Southard, Secretary, 175 S. High Street, Columbus, Ohio.
February 22, 23.....	Toledo, Ohio.....	The Farmers Grain Dealers Association of Ohio. C. S. Latchaw, Secretary, 102 Home Savings and Loan Building, Defiance, Ohio.
March 15.....	New York City.....	United Women's Wear League of America. Moses Mosessohn, Executive Chairman, 29 East 32nd Street, New York, N. Y.
April 22-29.....	Chicago, Illinois.....	Retail Delivery Association. A. W. Einstein, Manager, 225 W. 34th Street, New York, N. Y.
April 26.....	Detroit, Michigan.....	National Metal Trades Association. J. E. Nyhan, Secretary, 122 S. Michigan Ave., Chicago, Illinois.
April 19, 20.....	Cleveland, Ohio.....	American Institute of Mining and Metallurgical Engineers, H. Foster Bain, Secretary, 29 W. 39th Street, New York City.

PUBLICATIONS OF THE BUREAU OF BUSINESS RESEARCH

The publications of the Bureau of Business Research are of three types: (1) regular bulletins reporting results of studies conducted by the Bureau; (2) special bulletins presenting preliminary or informal reports of limited scope and of interest primarily to certain trade groups; (3) monthly bulletins dealing with current business conditions, both in general and in special fields.

Bulletins in the regular series, when available for general distribution, will be sent upon receipt of check. Bulletins in the special series will also be generally available, but in limited quantities and subject to withdrawal on exhaustion of the supply. The list below contains the numbers, titles, and prices of the bulletins so far published:

REGULAR SERIES

No.	*Title*	*Price*
R-1	Salesforce Compensation and Expense of Ohio Wholesale Grocers—Year 1924	$ .50
R-2	A Uniform System of Accounts for Retail Furniture Dealers (price to residents of Ohio, $1.00) regular price	5.00
R-3	Housewives' Buying Habits in Columbus, Ohio—Year 1924	.50
R-4	Salesforce Compensation and Expense in Retail Furniture Stores of the Ohio Valley—Year 1924	.50
R-5	The Ten-Payment-Plan of Retailing Men's Clothing	.50
R-6	The Construction Industry in Ohio	1.00

SPECIAL SERIES

X-1 Survey of Ohio Retail Dry Goods Advertising—Year 1924
X-2 Survey of Ohio Retail Clothing Advertising—Year 1924
X-3 Operating Results of Ohio Wholesale Grocers—Year 1923
X-4 Operating Results of Ohio Wholesale Grocers—Year 1924
X-5 Content of Advertising Courses in Colleges of Commerce—Agency Suggestions
X-6 Sales, Outstandings, and Advertising of Ohio Retail Dry Goods Dealers—Year 1925
X-7 Training for Retail Advertising
X-8 Operating Results of Ohio Wholesale Grocers—Year 1925

PROCEEDINGS OF MANAGEMENT WEEK, 1925

Office Management Section	$ .50
Production Section	.50
Marketing Section	.50
Accounting Section	.50
Proceedings of Management Week (all sections—cloth binding)	2.00

SUPPLEMENT TO THE
BULLETIN OF BUSINESS RESEARCH
OHIO STATE UNIVERSITY, COLUMBUS

Vol. II FEBRUARY, 1927 Number 1

THE RISE AND FALL OF BUILDING BOOMS

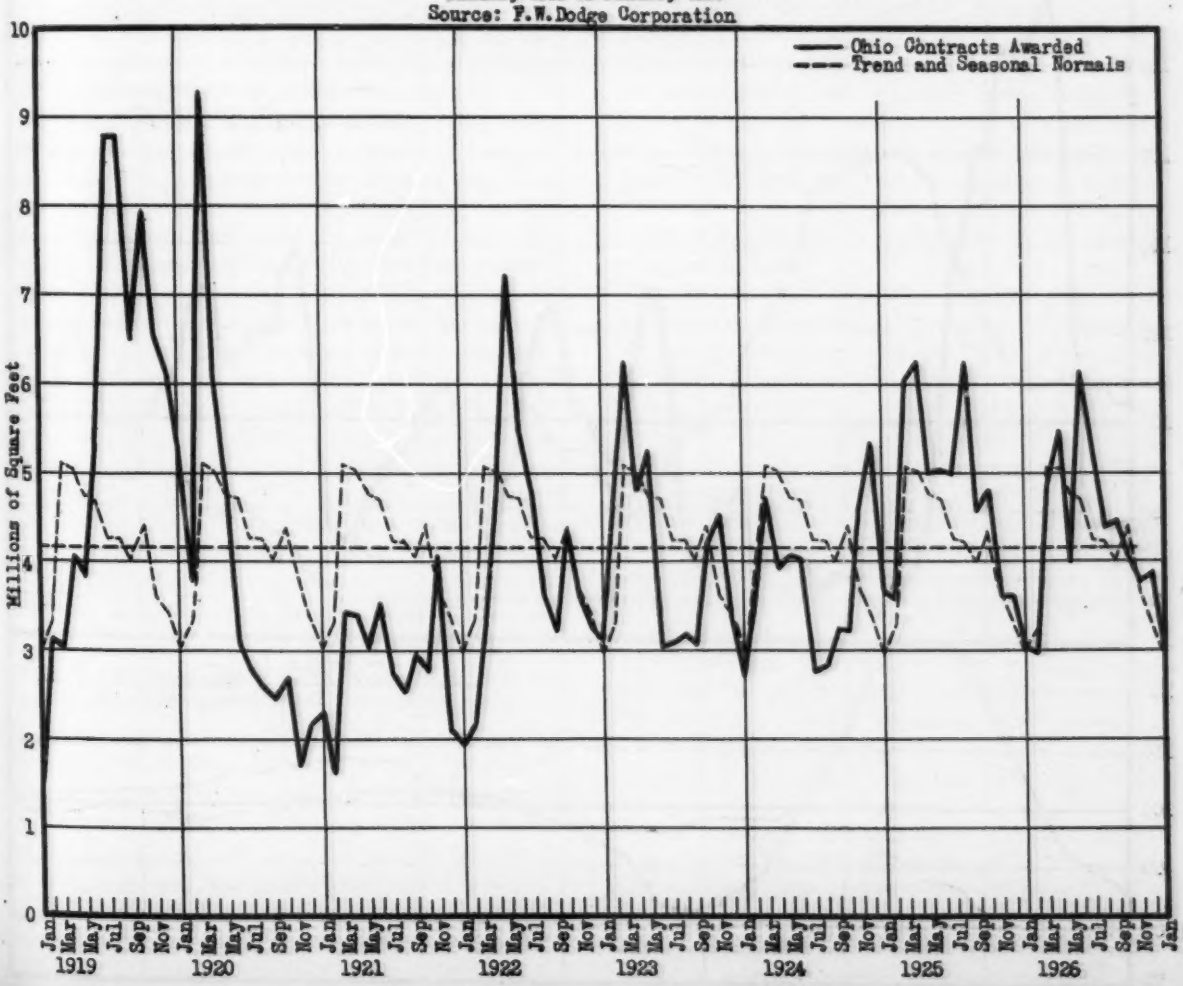
Address to the State Convention of the Ohio Association of Builders' Exchanges February 3, 1927, by Spurgeon Bell, Director of the Bureau of Business Research

In every industry there are individuals who build up their own business by good service and efficient management even when the total volume of business is just holding its own or actually receding. A recession, however, in the total volume of construction affects every one regardless of his situation. Even though your business may forge forward in times which are comparatively dull, you can be sure that it would grow more rapidly if the total business for the industry as a whole were expanding.

In planning one's activities there is always an advantage in estimating the general course of business from six months to a year in advance. Moreover, unless there is an understanding of the relationship of the several factors in the building situation, contractors are likely from time to time to take certain joint action that is injurious to the craft as a whole.

For the past eighteen months the better statisticians in the field of forecasting have inclined to the view

CHART S-1
FLOOR SPACE OF OHIO CONSTRUCTION CONTRACTS AWARDED
January 1919 to January 1927
Source: F.W.Dodge Corporation

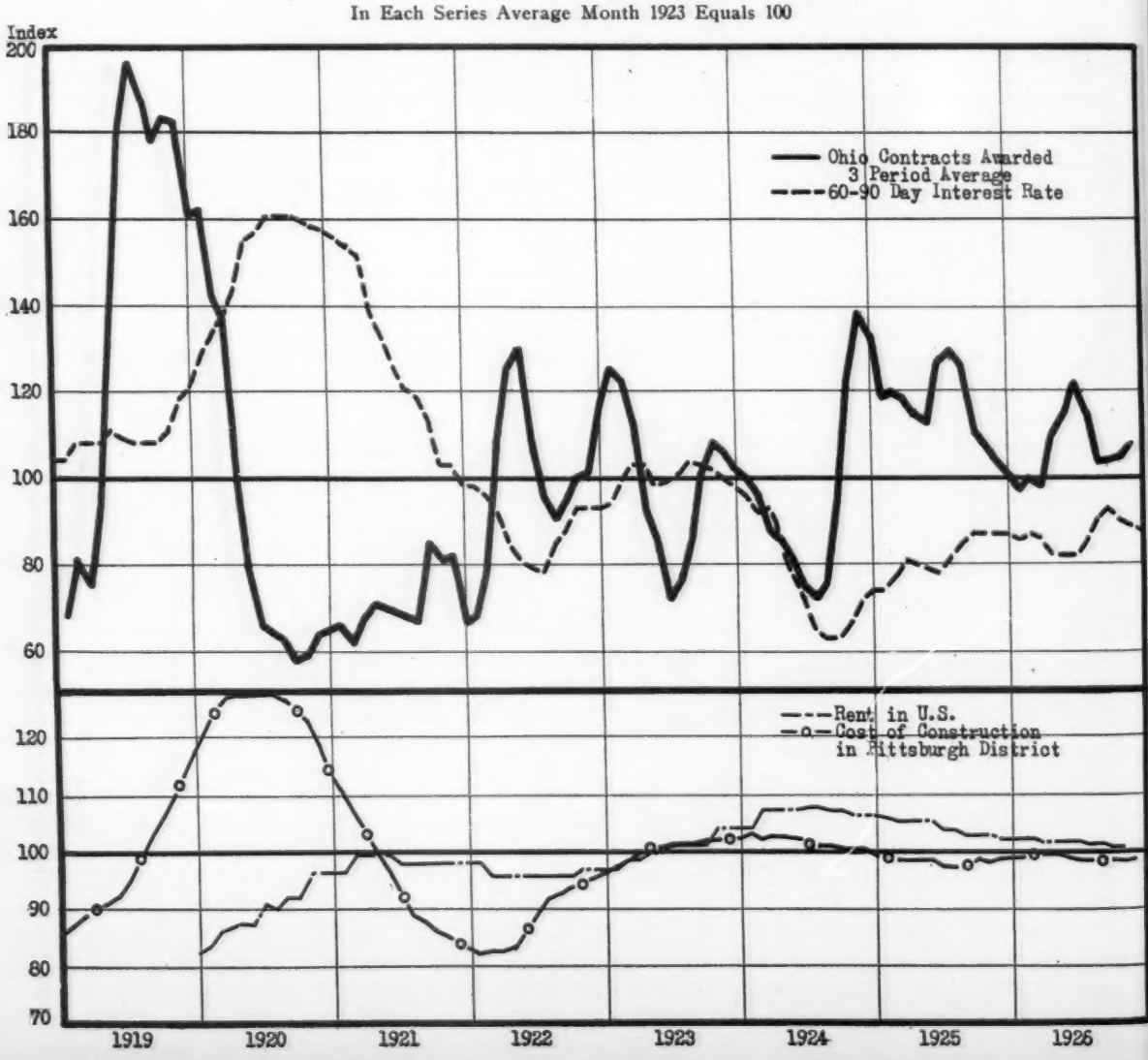


that we are on the verge of a considerable decline in the volume of construction. Nevertheless, 1926 witnessed a larger total volume of contracts let than any preceding year in the history of the country. In Ohio and the Pittsburgh District the volume of building construction almost held its own. (See Chart S1). If one considers the trend of construction since the war and the normal or average annual increase in its volume, it is fair to say that 1926 witnessed a halt in the upward trend. For the entire country construction went forward without falling below the preceding years but staging something less than the normal increase.

The fact that the decline in trend has been so small leads to some very interesting conclusions in regard to the effectiveness of various factors in checking a building boom. This study attracted my attention several months ago, and while I have not yet fully analyzed all the factors involved, I have gone far enough to arrive at some rather interesting conclusions, although they are subject to further modification on the basis of additional data and further analysis.

The first point in this analysis which occurred to me as important was the course of rents. We are accustomed to seeing quick shifts in security investments on the basis of changes in the interest basis upon which they sell. Without examining the facts, one might suppose that an increase in vacancies and the decline of rents would quickly halt a building boom. An examination of the facts on these points has been an extremely interesting matter. I have been able to secure

CHART S-2
FACTORS IN CONSTRUCTION IN OHIO
January 1919 to December 1926
(Contracts Series Corrected for Normal Seasonal Variation)
In Each Series Average Month 1923 Equals 100



data only since the war, which is a rather short period for final conclusions but there are some very suggestive circumstances.

The National Industrial Conference Board index of rents begins January, 1920. In that year there was a rapid rise in rents, the index going up from 82.6 to 95.9, or 16 per cent. (See Chart S2). There was, of course, a great scarcity in buildings for all purposes just after the war and this scarcity and the rise in rents doubtless had much to do with the interest in directing investments into construction channels. Rents continued to rise until March 1921. In the year beginning July 1921 rents declined 3.5 per cent. In November 1922 this steady increase in rent was resumed and in the period from October 1922 to July 1924 (a period of a year and nine months) the rent index rose 12.7 per cent.

Now we come to a very interesting point in this account; namely, that during this period of a year and nine months when rents were steadily rising there was a distinct recession in the post-war building boom. The conclusion that a recession in building activity of a year and nine months in length can develop in the face of constantly rising rents is the first significant conclusion to which I wish to call your attention.

Now let us turn our attention to the period from July 1924 to the end of 1926. A glance at the rent curve will show a regular decline in rents extending from the beginning to the end of the period. In the eighteen months of this period beginning July, 1924, the building boom continued in the face of declining rents. During the fall of 1925 and 1926 there was a halt in the upward trend of the building boom for the country as a whole and a slightly downward movement in building contracts for the state of Ohio. But we can say again that the volume of building has been still above normal in Ohio, the Pittsburgh District, and the country as a whole in the face of a gradual decline in rents which has been in progress for two and a half years.

Now let us turn to another significant series affecting the progress of the volume of building. I refer to the cost of construction. Let us see how that is correlated with the volume of construction. Before I got the actual figures before me, I was prepared to find a rather direct connection between rents and volume of construction and a more remote connection between cost and construction volume but just the reverse has been found to be true. A rise in cost of construction seems to occur in general about six months before a decline in the volume of construction. Now let us test out this assumption and see what value it may have in giving a glimpse into the future.

There was of course a sudden drop in the volume of building in the first half of 1920. The present building boom may be said to have begun in November 1920. A decline in building costs began in June of 1920, just five months in advance of the upward turn in volume of building contracts. The high point of the first wave of the present building boom was reached in June 1922. The low point in cost of construction for this first movement in contracts awarded was reached in February 1922 or four months before the high point of this first periodic movement. There was then initiated a gradual rise in construction costs from February 1922 which reached its maximum in February 1924, just exactly six months before the low point of the secondary recession in building volume was reached in August, 1924. The large volume of construction in 1925 was attained during a period of slightly declining costs of construction. This gradual decline in costs reached its low point in July 1925. From that time to March 1926 costs were moving slightly upward again. While this movement might be connected with the slight downward movement in the volume of building in the spring of 1926, the oscillations in cost seem entirely inadequate to account for the movements both in 1925 and 1926. Finding the cost oscillations inadequate to explain the movements of the past two years, attention was devoted to a third factor of importance; namely, the rate of interest.

In considering the rate of interest in this connection, one should not think of it primarily as a cost item but as a factor indicating the general availability of funds for investment. For this reason the rate on prime commercial paper was taken as representing the movement of interest and indicative of the general availability of funds.

The two curves of cost of construction and interest rates were found to lead the volume of contracts awarded by about six months. With these leads they were combined according to the accepted methods of multiple correlation and an estimating curve was secured which has a rather high degree of correlation with the actual volume of building contracts. Since the estimating curve moves up or down about six months before the volume of contracts, it is moved forward six months, as shown in Chart S-3. In the estimating curve the data are so plotted that the upward movement of the curve represents a downward movement in interest and construction costs, and vice versa. The closeness of fit between the estimating curve and the actual contracts awarded is apparent. The protrusion of the estimating curve about six months ahead of the volume of contracts represents a forecast of the trend of contracts in the early part of 1927.

(See Chart S3.) The multiple correlation coefficient is .82. In the present state of the art of forecasting, this represents what would be generally regarded as a good forecaster. Further experimentation with leads varying slightly from those accepted from inspection of the curves might still further improve the correlation, but time did not permit of this prior to this convention.

Moreover, there is one other possibility of improving the forecaster. It is possible that a prolonged decline in rents, say one of about two and a half years in duration, finally tends to halt the progress of a building boom. Before this study is completed the possibility in these correlations will be further studied for the purpose of seeing what further improvement may be made in the forecaster of building construction.

There are also some general economic implications involved in this study which will be considered later.

As the curve now stands it indicates a good volume of building contracts for the first half of 1927 with only a slight downward trend. However, the present tendency to lower rates of interest and declining costs will probably have a strong influence in keeping up the volume of construction in the second half of 1927 if they continue to move downward in the first half of 1927.

In making a forecaster of construction volume on the basis of interest rates and cost of construction it is not intended to ignore the influence of rent. It is possible that we may find a way of improving our interpretation by the use of it. It is not so consistent in forecasting the movement of building volume, however, as a curve constructed on the basis of construction cost and interest rates. The decline of rents is likely to go forward while the construction volume is increasing the supply of buildings but, on the whole, the volume of contracts awarded seems to be more sensitive to cost and interest factors than it is to rent movements.

At a later time a further study will be made on the relation between vacancies and rent. It is possible that the vacancy factor may be given importance but, for the present, our study leads us to place considerable reliance on the significance of a forecast based solely on the cost and interest factors.

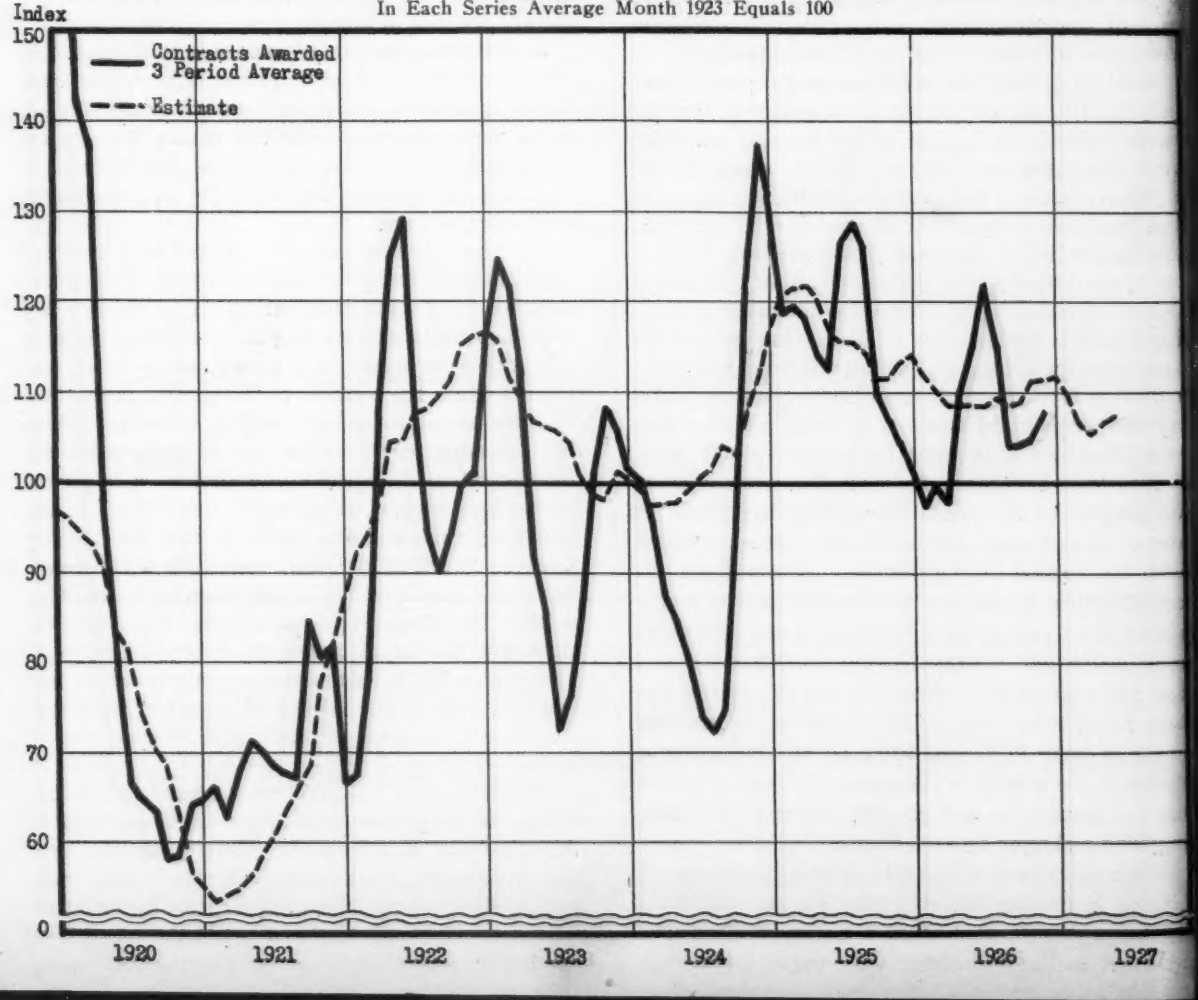



CHART S-3
OHIO CONSTRUCTION CONTRACTS AWARDED
Corrected for Normal Seasonal Variation
Actual and Estimate Six Months in Advance Based on Cost of Construction and Interest Rates
January 1920 to January 1927
In Each Series Average Month 1923 Equals 100